Volunteer Lake Assessment Program Individual Lake Reports

DORRS POND, MANCHESTER, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	1,473	**Max. Depth (m):**	2.9	**Flushing Rate (yr^{1})**	31.2
Surface Area (Ac.):	18	**Mean Depth (m):**	1.3	**P Retention Coef:**	0.39
Shore Length (m):	1,600	**Volume (m^{3}):**	92,000	**Elevation (ft):**	270

TROPHIC CLASSIFICATION

Year	Trophic class
1981	EUTROPHIC
1997	MESOTROPHIC

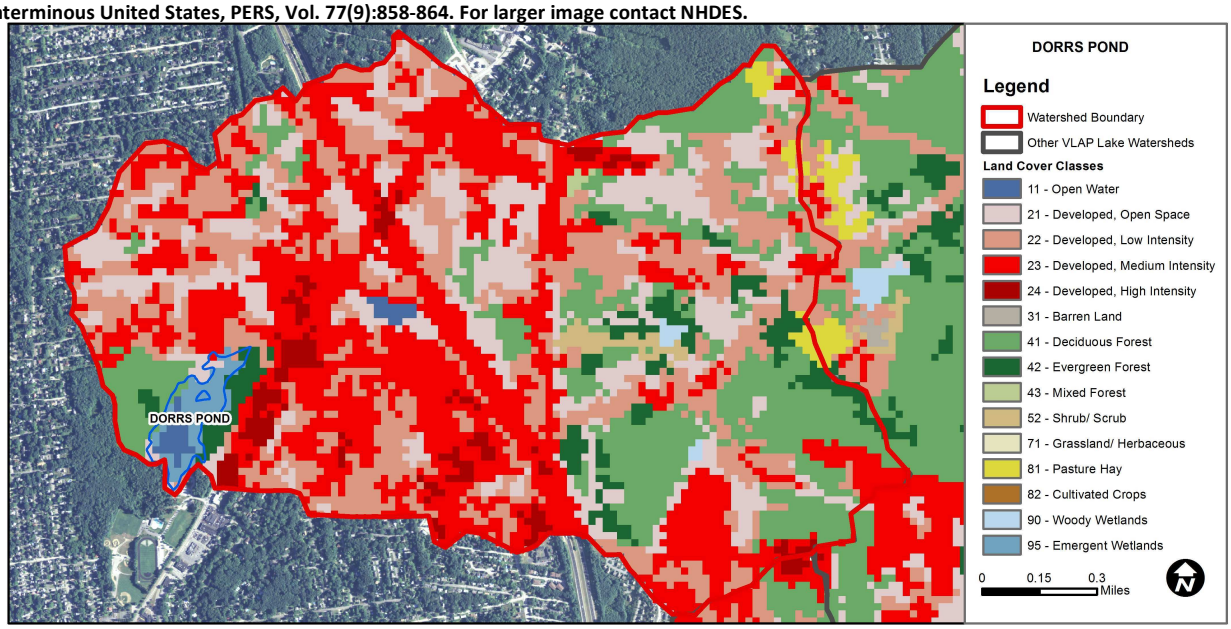
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Bad	>/=5 samples and median is >2x threshold.
	pH	Good	At least 10 samples with 1 sample but < 10% of samples exceeding criteria.
	D.O. (mg/L)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Bad	>/=5 samples and median is >2x threshold.
Primary Contact Recreation	E. coli	No Data	No Data for this parameter.
	Chlorophyll-a	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.

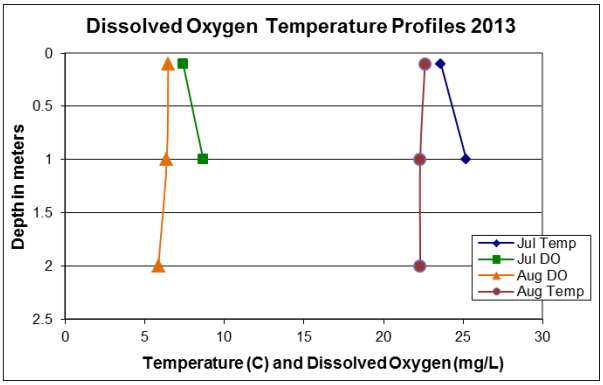


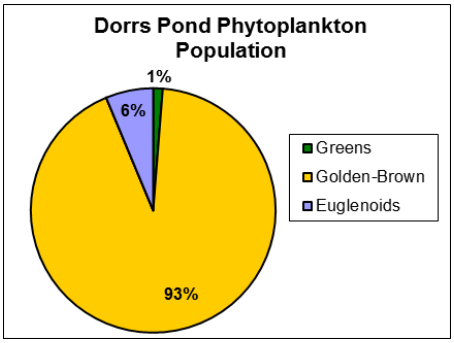
Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	0.65	Barren Land	0	Grassland/Herbaceous	0
Developed-Open Space	16.8	Deciduous Forest	16.18	Pasture Hay	0.63
Developed-Low Intensity	25.3	Evergreen Forest	4.15	Cultivated Crops	0
Developed-Medium Intensity	30.9	Mixed Forest	0.13	Woody Wetlands	0.26
Developed-High Intensity	2.94	Shrub-Scrub	0.76	Emergent Wetlands	1.23

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
DORRS POND, MANCHESTER, NH
2013 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **CHLOROPHYLL-A:** Chlorophyll levels were elevated and much greater than the state standard on each sampling event. Phytoplankton data indicate Golden-Brown algae were dominant and this genus typically prefers waters with a higher saline content. Historical trend analysis indicates significantly decreasing (improving) chlorophyll since monitoring began. We hope to see this continue!
- **CONDUCTIVITY/CHLORIDE:** Conductivity and chloride levels were elevated and indicative of the urbanized watershed. Lessard Inlet chloride was greater than the chronic chloride standard in August. Historical trend analysis indicates highly variable epilimnetic conductivity since monitoring began.
- **TOTAL PHOSPHORUS:** Epilimnetic, East II Inlet, Lessard Inlet, and Outlet phosphorus levels were elevated on each sampling event and indicative of an urban watershed. Epilimnetic phosphorus levels were higher than normal in June and July and water levels were low. Historical trend analysis indicates stable epilimnetic phosphorus with low variability between years.
- **TRANSPARENCY:** Transparency was low in June due to low water levels and returned to average in July and August. Historical trend analysis indicates relatively stable transparency with moderate variability between years.
- **TURBIDITY:** Epilimnetic and Outlet turbidity was slightly elevated on each sampling event likely due to the elevated algal growth. Lessard Inlet turbidity was slightly elevated on each sampling event and Juniper St. Inlet turbidity was elevated in July and August. Rain events occurred prior to each sampling event.
- **PH:** pH levels were sufficient to support aquatic life. Historical trend analysis indicates relatively stable epilimnetic pH with moderate variability between years.
- **RECOMMENDED ACTIONS:** The decreasing chlorophyll trend is a good sign and we hope to see this continue. Dorrs Pond is an urban pond greatly impacted by its watershed. While it is recommended to address chloride and phosphorus loading, we recognize limitations in improving water quality.





Station Name	Table 1. 2013 Average Water Quality Data for DORRS POND								
	Alk.	Chlor-a	Chloride	Cond.	Total P	Trans.		Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	ug/l	m		ntu	
						NVS	VS		
E II Inlet			160	692.0	27.4			0.99	7.26
Epilimnion	23.3	10.2	112	501.0	31.3	1.39	1.37	3.43	6.89
Juniper St Inlet			115	542.0	14.4			4.61	6.37
Lessard Inlet			240	764.3	32.6			3.04	6.90
Outlet				496.0	28.6			2.65	7.06

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	Stable	Trend not significant; data moderately variable.	Chlorophyll-a	Improving	Data significantly decreasing.
Conductivity	Stable	Trend not significant; data highly variable.	Transparency	Stable	Trend not significant; data moderately variable.
			Phosphorus (epilimnion)	Stable	Trend not significant; data show low variability.